

## AMENDMENTS TO THE CLAIMS

1-66. (Canceled)

67. (Currently amended) A composition comprising ~~a stabilized~~ an exendin-4 (1-39) analog comprising:

(a) a deletion of ~~0 to 5~~ 0 to 3 amino acids at positions corresponding to position ~~34-38~~ 36-38 of exendin-4; and

(b) an alpha-aspartate (Asp), ~~a beta-aspartate (isoaspartyl), or a cyclic imide~~ residue at a position corresponding to the Asn residue at position 28 of exendin-4 (SEQ ID NO:107);

~~(c) optionally an oxidized methionine residue at a position corresponding to position 14 of exendin-4;~~

~~(d) optionally an oxidized tryptophan residue at a position corresponding to position 25 of exendin-4; and~~

~~(e) optionally a deamidated or hydrolyzed Gln at a position corresponding to position 13 of exendin-4.~~

68. (Canceled)

69. (Currently amended) The composition of claim 67 further comprising at least one peptide sequence Z of 4-20 amino acid residues covalently bound to the ~~stabilized~~ exendin analog; or a pharmaceutically acceptable salt or solvate thereof.

70. (Canceled)

71. (Previously presented) The composition of claim 69, wherein Z comprises between about 4 to about 20 Lys amino acid units.

72. (Previously presented) The composition of claim 69, wherein Z comprises 6 Lys amino acid units.

73. (Currently amended) The composition of claim 69, wherein the ~~stabilized~~ exendin-4 (1-39) compound and Z are bonded by a peptide bond.

74. (Currently amended) The composition of claim 69, wherein Z is covalently bound to the ~~stabilized~~ exendin-4 (1-39) compound at the C-terminal carbonyl function.

75. (Currently amended) The composition of claim 67, wherein the ~~stabilized~~ exendin-4 (1-39) compound comprises a sequence selected from the group consisting of:

[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:83),  
des Pro<sup>36</sup>[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:15),  
des Pro<sup>36</sup>,Pro<sup>37</sup>[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:108), and  
des Pro<sup>36</sup>,Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:28).  
~~des Pro<sup>36</sup>[IsoAsp<sup>28</sup>]Exendin-4 (1-39),~~  
~~des Pro<sup>36</sup>[D-IsoAsp<sup>28</sup>]Exendin-4 (1-39),~~  
~~des Pro<sup>36</sup>[Met(O)<sup>14</sup>,Asp<sup>28</sup>]Exendin-4 (1-39),~~  
~~des Pro<sup>36</sup>[Met(O)<sup>14</sup>,IsoAsp<sup>28</sup>]Exendin-4 (1-39),~~  
~~des Pro<sup>36</sup>[Trp(O<sub>2</sub>)<sup>25</sup>,Asp<sup>28</sup>]Exendin-4 (1-39),~~  
~~des Pro<sup>36</sup>[Trp(O<sub>2</sub>)<sup>25</sup>,IsoAsp<sup>28</sup>]Exendin-4 (1-39)~~  
~~des Pro<sup>36</sup>[Met(O)<sup>14</sup>,Trp(O<sub>2</sub>)<sup>25</sup>,Asp<sup>28</sup>]Exendin-4 (1-39), and~~  
~~des Pro<sup>36</sup>[Met(O)<sup>14</sup>,Trp(O<sub>2</sub>)<sup>25</sup>,IsoAsp<sup>28</sup>]Exendin-4 (1-39).~~

76. (Previously presented) The composition of claim 75 further comprising the following group linked to the C-terminus of the compound: -Lys<sub>6</sub>-NH<sub>2</sub>.

77. (Currently amended) The composition of claim 67, wherein the stabilized exendin-4 (1-39) compound comprises a sequence selected from the group consisting of:

H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-Lys<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:27),  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup> [Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub> (SEQ ID NO:29),  
H-Asn-(Glu)<sub>5</sub>des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup> [Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub> (SEQ ID NO:30),  
des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup> [Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:31),  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup> [Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub> (SEQ ID

NO:32), and

H-Asn-(Glu)<sub>5</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup> [Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:33),

H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>[Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-Lys<sub>6</sub>-NH<sub>2</sub>;  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub>;  
H-Asn-(Glu)<sub>5</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub>;  
des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>;  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>;  
H-Asn-(Glu)<sub>5</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-  
NH<sub>2</sub>;

H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>[Met(O)<sup>14</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-Lys<sub>6</sub>-NH<sub>2</sub>;  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Met(O)<sup>14</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub>;  
H-Asn-(Glu)<sub>5</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Met(O)<sup>14</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub>;  
des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Met(O)<sup>14</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>;  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Met(O)<sup>14</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>;  
H-Asn-(Glu)<sub>5</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Met(O)<sup>14</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-  
NH<sub>2</sub>;

H-Lys<sub>6</sub>-des Pro<sup>36</sup>[Met(O)<sup>14</sup>, Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-Lys<sub>6</sub>-NH<sub>2</sub>;  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>, Pro<sup>37</sup>, Pro<sup>38</sup>[Met(O)<sup>14</sup>, Trp(O<sub>2</sub>)<sup>25</sup>, Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub>;

~~H-Asn-(Glu)<sub>5</sub>-des-Pro<sup>36</sup>;Pro<sup>37</sup>;Pro<sup>38</sup>[Met(O)<sup>14</sup>;Trp(O<sub>2</sub>)<sup>25</sup>;Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub>;~~  
~~des-Pro<sup>36</sup>;Pro<sup>37</sup>;Pro<sup>38</sup>[Met(O)<sup>14</sup>;Trp(O<sub>2</sub>)<sup>25</sup>;Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>;~~  
~~H-(Lys)<sub>6</sub>-des-Pro<sup>36</sup>;Pro<sup>37</sup>;Pro<sup>38</sup>[Met(O)<sup>14</sup>;Trp(O<sub>2</sub>)<sup>25</sup>;Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>; and~~  
~~H-Asn-(Glu)<sub>5</sub>-des-Pro<sup>36</sup>;Pro<sup>37</sup>;Pro<sup>38</sup>[Met(O)<sup>14</sup>;Trp(O<sub>2</sub>)<sup>25</sup>;Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub>;~~  
 or a pharmaceutically acceptable salt or solvate thereof.

78. (Previously presented) The composition of claim 67, wherein the amino acid residues have an L-configuration, a D-configuration, or the composition includes a mixture of L- and D-amino acid residues.

79. (Currently amended) A composition of any one of claims 67 and ~~70-78~~ 71-78, further comprising a pharmaceutically acceptable carrier.

80. (Previously presented) A composition of claim 69, further comprising a pharmaceutically acceptable carrier.

81. (Previously presented) The composition of claim 79, wherein the composition comprises a depot formulation, microspheres, liposomes or the composition includes a stabilized liquid formulation.

82. (Previously presented) The composition of claim 80, wherein the composition comprises a depot formulation, microspheres, liposomes or the composition includes a stabilized liquid formulation.

83-91. (Canceled)

92. (Currently amended) A method for treating diabetes type 1 ~~or type 2, insulin resistance syndrome, impaired glucose tolerance (IGT), obesity, eating disorders, hyperglycemia, metabolic disorders, and gastric disease~~, the method comprising administering a therapeutically effective amount of the composition of claim 67.

93. (Previously presented) A method for treating disease states associated with elevated blood glucose levels, said method comprising administering a therapeutically effective amount of the composition of claim 67.

94. (Previously presented) A method for treating disease states associated with elevated blood glucose levels, said method comprising administering a therapeutically effective amount of the composition of claim 69.

95. (Previously presented) A method for regulation of blood glucose levels, the method comprising administering a therapeutically effective amount of the composition of claim 67.

96. (Previously presented) A method for regulation of blood glucose levels, the method comprising administering a therapeutically effective amount of the composition of claim 69.

97. (Withdrawn) A method for regulation of gastric emptying, the method comprising administering a therapeutically effective amount of the composition of claim 67.

98. (Withdrawn) A method for regulation of gastric emptying, the method comprising administering a therapeutically effective amount of the composition of claim 69.

99. (Previously presented) A method of stimulating insulin release in a mammal comprising administering an effective insulinotropic amount of the composition of claim 67.

100. (Previously presented) A method of stimulating insulin release in a mammal comprising administering an effective insulinotropic amount of the composition of claim 69.

101-108. (Canceled)

109. (New) The peptide of claim 75 comprising the sequence [Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:83).

110. (New) The peptide of claim 75 comprising the sequence des Pro<sup>36</sup>[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:15).

111. (New) The peptide of claim 75 comprising the sequence des Pro<sup>36</sup>,Pro<sup>37</sup>[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:108).

112. (New) The peptide of claim 75 comprising the sequence des Pro<sup>36</sup>,Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4 (1-39) (SEQ ID NO:28).

113. (New) The peptide of claim 77 comprising the sequence  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-Lys<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:27).

114. (New) The peptide of claim 77 comprising the sequence  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>,Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub> (SEQ ID NO:29).

115. (New) The peptide of claim 77 comprising the sequence  
H-Asn-(Glu)<sub>5</sub>des Pro<sup>36</sup>, Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-NH<sub>2</sub> (SEQ ID NO:30).

116. (New) The peptide of claim 77 comprising the sequence  
des Pro<sup>36</sup>, Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:31).

117. (New) The peptide of claim 77 comprising the sequence  
H-(Lys)<sub>6</sub>-des Pro<sup>36</sup>,Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:32).

118. (New) The peptide of claim 77 comprising the sequence  
H-Asn-(Glu)<sub>5</sub>-des Pro<sup>36</sup>,Pro<sup>37</sup>,Pro<sup>38</sup>[Asp<sup>28</sup>]Exendin-4(1-39)-(Lys)<sub>6</sub>-NH<sub>2</sub> (SEQ ID NO:33).